

) :
)
SPECIFICATION

NUCLEOSIDES OR NUCLEOTIDES HAVING
NOVEL UNNATURAL BASES AND USE THEREOF

5

TECHNICAL FIELD

The present invention relates to nucleosides or nucleotides having novel unnatural bases and use thereof.

10 BACKGROUND ART

In nucleic acids (DNA, RNA) which are biological macromolecules, enormous amounts of genetic information essential for vital activities are recorded as sequences composed of combinations of only 4 bases. Such a nucleic acid allows self-replication using itself as a template by the action of DNA polymerase, and further undergoes processes of RNA polymerase-mediated transcription and ribosome-mediated translation to ensure the transmission of genetic information from DNA to DNA, from DNA to RNA, and/or from RNA to protein. It is exclusive base-pairing rules (A:T/U, G:C) that enable these replication and transmission events of genetic information. In addition, nucleic acids can form a variety of higher-order structures and hence exert various functions. By way of example, it is one of the indications that a large number of novel nucleic acids having aptamer and/or ribozyme functions have been generated by *in vitro* selection techniques.

However, unlike proteins which are composed of 20